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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the document recording equipment of the document access system which provides a user with the electronic filing document especially accumulated according to the access demand from document access equipment about the document recording equipment of a document access system.

[0002]

[Description of the Prior Art] In recent years, the system which peruses a simple document in a network environment is spreading. For example, there is an information access environment called "the Internet (Internet)" of subject and "World Wide Web (WWW)" recently. In this access system, the method which exchanges the data format called "HTML (Hyper Text Markup-Language)" with the protocol called "HTTP (HyperText Transfer Protocol)" between a "WWW server" and a "WWW browser" is taken.

[0003] Like a hypertext, this system carries out the data exchange of text and the image information of a fixed format in the simple format by the markup language as a card (sheet of one sheet without concept of page) unit, and is mainly spreading also through a general market as a system to peruse. In addition, the technique about the Internet is explained by ISBN 4-900718-12-2 "the Internet you ZAZU guide" in full detail.

[0004] On this infrastructure, in the company and external are not asked but want of the user who wants to build a system which exchanges and peruses an electronic filing document is mounting.

[0005]

[Problem(s) to be Solved by the Invention] However, when using the above network environments for document access, there is the following trouble and a satisfactory system cannot be realized. That is, a limitation comes out in the class of document which can be expressed as the part whose format of a document is easy text-based syntax, and its trade-off. In order to draw up a document by specific syntax, a document cannot be drawn up as it is with the word processor which he is using, but a peculiar document preparation technique must be required, or the word processor which had the function which can be changed or outputted in a specific format called HTML must be used.

[0006] On the other hand, although there is a method which acquires each document in each location using a file transfer protocol, and are exchanged as a data file of a word processor document when aiming at a document interchange, this method cannot realize a satisfactory system from the following reason, either. That is, since word processor data must acquire all pages, when a head page cannot immediately peruse the content of a document, either but peruses the big document of pagination, a transfer of a document takes time amount. And since application software, such as each word processor, must be prepared in order to correspond to access of various word processor data by the user side, the premise which prepares all the application software that all visitors need for access is impossible.

[0007] Furthermore, in order to solve these problems, the method changed and transmitted to the document format which a user side requires by the server side is also considered, but since the transposition with perfect cannot be in conversion of word processor data, it will be able to change only

in the limited range but an inconsistency with an original copy will surely occur. And since and version up is also repeated frequently, originally the method converted to all formats is unrealizable. [a format of word processor data] Therefore, the actual condition is that it is unexchangeable except a format of the typical application software generally used well.

[0008] On the other hand, there is image filing equipment as local equipment to the document interchange via a network. It is required in a device which the device over the image filling system treating a scanning image with obvious although various kinds of devices are show in the display of the raster image image of image filing from the former it be the data format of a page unit from the first consists of two or more pages , and cannot apply it to the document data of the general application software which does not have compatibility in a format , either , and is different with the image filing on condition of local filing in the device over the remote access equipment via a network .

[0009] It is made to the object for access which is conscious of a page also by the access system which this invention is made in view of such a point, and does not have a page concept in the document of the arbitration created with general application software, and even when peruse with the remote access equipment which went via the communication line not to mention the local system, the amount of the transfer information over one access demand reduces, and it aims at offer the document are-recording equipment of the document access system which can raise responsibility ability.

[0010]

[Means for Solving the Problem] Drawing 1 is the principle block diagram of a document access system. In this drawing, a document access system consists of document access equipment 1, document are recording equipment 2, and a communication path 3 that combines these. Document access equipment 1 has 1d of document receiving means to receive access demand transmitting means 1b which transmits the access demand directed by input means 1a to document are recording equipment 2, and the document answered and transmitted to this access demand, and to output to display means 1c. Access demand reception / analysis means 2a which document are recording equipment 2 receives the access demand transmitted through a communication path 3 from document access equipment 1, and is analyzed, Document storing means 2b in which at least one image data aggregate stores the electronic filing document currently held per page, Document processing means 2c processed per page according to the demand which had data of the electronic filing document in document storing means 2b demanded from document access equipment 1 specified, 2d of response data generation means to give the reference information to an order page to the document processed by this document processing means 2c, and to generate response data, It has document transmitting means 2e which transmits the response data generated by 2d of this response data generation means to the document access equipment 1 with which the access demand was published.

[0011] Moreover, a document access system is equipped with the electronic-filing-document listing device 4, and this electronic-filing-document listing device 4 is processed into the image data of a page unit in a predetermined graphics format in response to the printing control command which application software 4a with the print facility to a paper medium published at the time of printing processing, and has electronic-filing-document creation means 4b which collects the image data of a page unit and is outputted in a predetermined document format.

[0012] According to the document access system of the above-mentioned configuration, the document which consists of two or more pages created by application software 4a in document preparation equipment 4 first is processed into an electronic filing document by which at least one image data aggregate is held per page by electronic-filing-document creation means 4b, and is stored in document are recording equipment 2. As for the device of fundamental access, document access equipment 1 publishes an access demand through access demand transmitting means 1b first. Then, in the document are recording equipment 2 side, the access demand to which access demand reception / analysis means 2a was transmitted is received. An electronic filing document with an access demand is acquired from document storing means 2b, is processed into the format according to the content of the access demand in document processing means 2c, and prepares response data by 2d of response data generation means. In case, as for 2d of response data generation means, document access equipment 1 publishes an access

demand by access demand transmitting means 1b at this time, the response data which embedded reference information beforehand at the format of the document for access are generated so that not only assignment of an electronic filing document but page assignment can be published collectively. Thus, the generated response data are transmitted from document transmitting means 2e. It is received by 1d of document receiving means of document access equipment 1, and the response data transmitted through the communication path 3 are sent and displayed on display means 1c.

[0013] Therefore, the response data to the access demand from document access equipment 1 Since it becomes the image information in a page unit, the transmission data sent and received through a communication path 3 by one access demand are pressed down below at the image amount of data for at most 1 page. The response time until a actual page is displayed by display means 1c of document access equipment 1 from page display demand actuation can be shortened, and the response effectiveness of access can be gathered. Moreover, since the electronic filing document with two or more pages created by specific application software 4a is made the image data for access divided per page by electronic-filing-document creation means 4b and is stored in document storing means 2b of document are recording equipment 2, it does not need to prepare the specific application software for displaying an electronic filing document with document access equipment 1.

[0014]

[Embodiment of the Invention] First, the outline of this invention is explained with reference to a drawing. Drawing 1 is the principle block diagram of a document access system.

[0015] In this drawing, the document access system consisted of document access equipment 1, document are recording equipment 2, and a communication path 3 that combines these, and is equipped with the document preparation equipment 4 for drawing up further the electronic filing document for access accumulated in document are recording equipment 2.

[0016] Document access equipment 1 has in the access demand transmitting means 1b which transmits the access demand inputted and directed by input means 1a to document are-recording equipment 2, and 1d of document receiving means receive in the response data which answered this access demand and have been transmitted from document are-recording equipment 2, and output to display means 1c. Moreover, access demand reception / analysis means 2a which document are recording equipment 2 receives the access demand transmitted through a communication path 3 from document access equipment 1, and analyzes the content of the access demand, Document storing means 2b in which at least one image data aggregate created by document preparation equipment 4 stores the electronic filing document currently held per page, respectively, Document processing means 2c processed per page according to the demand which had data of the electronic filing document in document storing means 2b demanded from document access equipment 1 specified, 2d of response data generation means to give the reference information for specifying a contiguity page as the document processed by this document processing means 2c, and to generate response data, It has document transmitting means 2e which transmits the response data generated by 2d of this response data generation means to the document access equipment 1 with which the access demand was published. Document preparation equipment 4 has electronic-filing-document creation means 4b with a false print station which processes it into the image data of a page unit in a predetermined graphics format in response to the printing control command which application software 4a and these application software 4a, such as a word processor with the print facility to a paper medium, published at the time of printing processing, collects the image data of a page unit, and is outputted to document are recording equipment 2 in a predetermined document format.

[0017] According to the document access system of the above-mentioned configuration, in document preparation equipment 4, an electronic filing document is first drawn up by application software 4a. this application software 4a -- word-processing software, spreadsheet software, and illustrating -- it is software, database software, etc. and is the software which had strictly the function printed on paper. The document which consists of two or more pages created by application software 4a is passed to electronic-filing-document creation means 4b, and is processed into an electronic filing document by which at least one image data aggregate is held per page here. The processed electronic filing document

is transmitted to document are recording equipment 2, and is accumulated in the document storing means 2b.

[0018] When perusing the accumulated electronic filing document, the access demand inputted through input means 1a is first sent out to a communication path 3 by access demand transmitting means 1b of document access equipment 1. The sent-out access demand is received in access demand reception / analysis means 2a of document are recording equipment 2, and the content of a demand is analyzed. Subsequently, an electronic filing document with an access demand is acquired from document storing means 2b, and is processed into the format according to the content of the access demand in document processing means 2c. Here processing of the extract of the page specified, for example, the extract of the specified field, conversion in the specified resolution, conversion to the specified graphics format, etc. is performed, and it is ****. Then, response data are generated by 2d of response data generation means. In case, as for 2d of response data generation means, document access equipment 1 publishes an access demand by access demand transmitting means 1b at this time, the response data which embedded reference information beforehand at the format of the document for access are generated so that not only assignment of an electronic filing document but page assignment can be published collectively. Thus, the generated response data are transmitted from document transmitting means 2e. It will be received by 1d of document receiving means of document access equipment 1, and the response data transmitted through the communication path 3 will be sent and displayed on display means 1c.

[0019] According to this invention, therefore, the response data to the access demand from document access equipment 1 Since it becomes the image information in a page unit, the transmission data sent and received through a communication path 3 by one access demand will be pressed down below at the image amount of data for at most 1 page. The response time until the page which corresponds from page display demand actuation is actually displayed by display means 1c of document access equipment 1 is shortened, and it becomes possible to gather the response effectiveness of the access in a document access system.

[0020] Moreover, since the electronic filing document with two or more pages created by specific application software 4a is made the general-purpose image data for access divided per page by electronic-filing-document creation means 4b and is stored in document storing means 2b of document are recording equipment 2, it does not need to prepare the specific application software for displaying an electronic filing document with document access equipment 1.

[0021] Next, the case where the document which consists of two or more pages in which the gestalt of operation of this invention was stored by the server on a network is applied to the system which two or more users can peruse is made into an example, and it explains.

[0022] Drawing 2 is the block diagram showing the example of the server client structure of a system. The server client system of a graphic display is constituted by the client 10 which is a user's terminal, the file server 20, and LAN (Local AreaNetwork) which connected these and the network 30 called WAN (Wide Area Network). Although a client 10 functions as document access equipment and more than one exist on a network, the example of a graphic display has shown only one.

[0023] A client 10 consists of the access demand transmitting section 11 and a document receive section 12, the input unit 13 which consists of pointing devices, such as a keyboard or a mouse, is connected to the access demand transmitting section 11, and the display 14 is connected to the document receive section 12. Moreover, the access demand transmitting section 11 and the document receive section 12 are connected to the network 30, respectively. With the access demand receive section 21 by which the file server 20 was connected to the network 30 The distinction section 22 for access which analyzes the access demand which received, and the document acquisition section 23 which acquires the distinguished object for access, The file storing section 24 which accumulates the electronic filing document drawn up beforehand, The document processing section 25 which processes the acquired document into a format of the assignment analyzed in the distinction section 22 for access, The reference information generation section 26 which generates the information on a contiguity page based on the page information analyzed in the distinction section 22 for access, The response format composition section 27 which creates the response data which embedded the reference information

generated in the reference information generation section 26 by the document data processed in the document processing section 25, It consists of the transmission place judging section 28 which judges the transmission place of response data from the information on the demand origin distinguished in the distinction section 22 for access, and the document transmitting section 29 which transmits to the transmission place which had response data judged. The distinction section 22 for access consists of location extract section 22a which extracts the location information on an object file from an access demand, and extension extract section 22b which extracts the extension showing the content of processing demanded from the access demand further. The file server 20 is equipped with the document preparation section 40 which consisted of general application software 41 and a false printer driver 42 again. In addition, although this document preparation section 40 illustrated the case where it was carried in the file server 20, as long as it is the environment where the general application software 41 operates, it may be in the client of the arbitration on a network 30.

[0024] A client 10 is the personal computer or workstation in which the document access software (WWW browser) which can access the WWW server of the Internet was specifically carried. In this client 10, a user starts that software. HTTP (Hyper Text Transfer Protocol), If the location discernment name called URL (Uniform Resource Locator) with the protocol of the assignment called FTP (File Transfer Protocol) is sent to the file server 20 made into a WWW server When the data returned as a response are displayed and a user operates reference information on it, a series of actuation of sending a location discernment name to a file server again can be repeated, and the information on many file servers connected to the Internet can be perused and acquired.

[0025] When reference information is contained at some data for a display which a client 10 receives, and is equipped with the alphabetic character range, or the information on a block definition and information required for the next access demand issuance and the specific viewing area is directed with an input unit 13, the access demand using the information included there is published. This reference information will be "a support tag containing URL", if it says in the HTML syntax vocabulary of WWW.

[0026] An access demand is the communications protocol which the access demand transmitting section 11 and the access demand receive section 21 can interpret. For example, in the case of WWW, the content to exchange is called URL and exchanges protocol classification and the character string which combined location assignment of the file which wants to peruse [peruse and it identifier(network address)-specifies / file] a WWW server, for example, "http://www.fx.co.jp/dir1/dir2/index.htm."

[0027] A file server 20 is document are recording equipment which has pointed out the device called a WWW server by the Internet, and operates as a resident program on an operating system equipped with a directory mold file system and network communication functions, such as general Unix (trademark in the U.S. to which X/Open Co. and Ltd. have licensed, and other countries), Windows, and WindowsNT (all are the trademarks of U.S. Microsoft). If an access request arrives from a client 10, the specified file will be returned to the client 10 with a demand out of the data file of the HTML format stored in the predetermined directory of the file storing section 24.

[0028] In the document preparation section 40 in a file server 20, the general application software 41 is the generic name of the application software generally marketed, and is aimed at various application software, such as a word processor with the print facility of the GDI (Graphic Device Interface) course printed on paper, an editor, a spreadsheet, a database, and drawing.

[0029] The false printer driver 42 is equipment outputted in the specific format pack with reception the printing control command published at the time of printing processing, and pack this command per page, and whose general application software 41 creates one or more kinds of image data, gathers this image data, constitutes page record, and collects and mentions a page later. Namely, this false printer driver 42 changes into PDL (Page Description Language) or general graphics format information the GDI command (drawing function) which the general application software 41 publishes by printing processing from reception and its information with a driver interface, and instead of the processing which the usual printer driver transmits to a printer, it is file-ized and it saves it in the file storing section 24 as an electronic filing document. This false printer driver 42 can use the document processing system

equipment of a publication for example, for a Japanese-Patent-Application-No. No. 117733 [seven to] description. This document-processing-system equipment is the thing which draws up that electronic compound statement document [like] which sticks the document of a paper medium, and enabled it to deal with the drawn-up compound statement document electronically like the document of a paper medium, creates the data depending on document preparation application software, the data for a display independent of document preparation application software, and the relational data about the synthetic location between each document element, and stores them in a storage means.

[0030] Drawing 3 is a flow chart which shows actuation of the document access function of a client. In a client 10, when performing document access, the coordinate directed with the input unit 13 is judged first (step S1). An access demand is determined based on the directed coordinate (step S2). Next, processing which transmits the determined access demand is carried out (step S3). That access demand is passed to the access demand transmitting section 11 in this processing.

[0031] On the other hand, in the document receive section 12, reception of the response to an access demand carries out page image reception (step S4). The received page image is passed to a display 14 and displayed with a display 14 (step S5). Finally, it is judged whether it is termination, and if it is not termination, document access will end this document access to step S1, if it is return and termination (step S6).

[0032] Here, each detail is shown below about access demand transmitting processing of step S3, and the page image reception of step S4. Drawing 4 is a flow chart which shows the flow of access demand transmitting processing.

[0033] The access demand transmitting section 11 judges a communications protocol from the determined access demand (step S11). For example, an access demand (URL) judges with "http://www.fx.co.jp/A.mp?p1", then a communications protocol being "http." Next, the network address of the access demand receive section 21 is judged from an access demand (step S12). In the above-mentioned example, the network address like "129.249. xxx.yyy" is judged from the phase hand "www.fx.co.jp" described by the access demand. And an access demand is transmitted to the appointed address with the appointed protocol (step S13).

[0034] Drawing 5 is a flow chart which shows the flow of page image reception. In the document receive section 12, it will be in the state waiting for receiving first (step S21). Here, it is judged whether there was any reception of a document image (step S22), and if there is nothing, return and the file transmitted from the document transmitting section 29 when it was will be received to the waiting for reception (step S23). And it is judged whether it is the completion of reception (step S24), and if it is not the completion of reception, if it is return and the completion of reception, this page image reception will be ended to the waiting for reception.

[0035] Next, actuation of a file server 20 is explained. Drawing 6 is a flow chart which shows actuation of a file server. In a file server 20, the access demand reception in the access demand receive section 21 occurs first. That is, the access demand receive section 21 will be in the condition of the waiting for access demand reception (step S31), and it is judged (step S32), and if there is whether no there was any reception of an access demand, it will return to the waiting for reception.

[0036] If there is reception of an access demand, branching of the processing according to protocol will be performed (step S33), and it will progress to the distinction processing for [in the distinction section 22 for access] access (step S34). After distinction processing finishes, the file for access judges whether it is an electronic-filing-document file by format of the document preparation section 40 (step S35). If the object for access is not an electronic-filing-document file by the document preparation section 40, HTML transmitting processing as usual will be performed (step S36), if it is an electronic-filing-document file by the document preparation section 40, the transmit information processing processing will be performed (step S37), and transmitting processing of a processing result will be performed (step S38). After transmitting processing of steps S36 and S38 is completed, it returns to access demand reception.

[0037] Next, the detail of the distinction processing for [in step S34] access and electronic-filing-document transmit information processing processing of step S37 is shown below. Drawing 7 is a flow

chart which shows the flow of the distinction processing for access.

[0038] In the electronic-filing-document transmit information processing processing in the distinction section 22 for access, location extract section 22a extracts the location information for access from an access demand first (step S41). A. "mp?p1" after the description as which the access demand specified the phase hand as above-mentioned "http://www.fx.co.jp/A.mp?p1", then location information is extracted. Next, it is confirmed whether the file is stored in the applicable location (step S42). Here, if the file is not stored in the applicable location, one element of pass of location information is cut (step S43). That is, the extension "?p1" is cut from A. "mp?p1" of location information, and "A. mp" is obtained. If the file "A. mp" is stored in the applicable location, it will be judged whether the storing file is an electronic filing document by format of the document preparation section 40 (step S44). If judged as the electronic filing document by format of the document preparation section 40 here, the storing file will be distinguished as it is a "electronic filing document" (step S45). In step S44, it is judged whether when it was not an electronic filing document, there was any cut of the pass element by step S43 (step S46), and if it has not cut, and the file was distinguished from the regular file (step S47) and it has cut, it will be distinguished from an error here (step S48).

[0039] Drawing 8 is a flow chart which shows the flow of electronic-filing-document transmit information processing processing. In the document processing section 25, the extension of the location information omitted by the distinction processing for access is acquired from extension extract section 22b (step S51). That is, if location information is "A. mp?p1", "p1" of the extension will be obtained. Next, processing branches according to the content of this extension (step S52). That is, like the above-mentioned example, if the extension is "p1", since this is the extension showing page assignment, it progresses to assignment page image extract processing (step S53). As other branching, there are assignment format image data extraction processing (step S54), viewing-area assignment processing (step S55), display scale-factor assignment processing (step S56), data file acquisition processing (step S57), and access privilege judging processing (step S58). Subsequently, processing which creates the reference information to an order page in the reference information generation section 26 is carried out (step S59), and, finally the data format for a response is processed in the response format composition section 27 (step S60).

[0040] Next, although the detail of each processing from the above-mentioned step S54 to step S59 is explained, it is created in the document preparation section 40 before that, and the electronic filing document stored in the file storing section 24 is explained previously.

[0041] Drawing 9 is drawing showing the data format of the electronic filing document which document preparation equipment outputs. In this drawing, an electronic filing document consists of the profile section 51, the page section 52, and document data division 53. The attribute also common to which page, for example, index information, access information, a page number attribute, etc. are described by the profile section 51. The page section 52 consists of records of each page unit. Furthermore, two or more image data PDs by two or more graphics formats are storable in the page section 52. Here, PD 1-x, PD 2-x, and PD 3-x (x 1, 2, 3 ...) show the image data record of each page. z expressed with PDy-z (y pagination and z 1, 2, 3 ...) is what showed the class of graphics format. Moreover, specifically By the raster image image system, for example, the image for paint system software, The image for G3 facsimile exchange which is a common-name MMR (modified modified read) compression image, A large number [there is a scanning image which an image scanner and a digital copier generate, and / in HTML / a standard bit map format and the format which can be treated in the Windows environment] as the image for paint system software. moreover, by the vector image system (set of a character code, a graphic element, an image, and a drawing attribute) WMF (Windows Meta File) and EWMF (Enhanced WMF) which are a graphic form exchange standard format in the Windows environment, PICT of the graphic form exchange standard format mainly used with Macintosh (Macintosh is the trademark of U.S. Apple Computer Inc.) etc., CGM which is an ISO criterion for graphic form exchange (Computer Graphic Metafile), There are PDF of the format for "Viewers Acrobat" which U.S. Adobe Systems advocates, EPSF (Encapsulated PostScript Format), etc. Furthermore, by the description language system for printer printing, there is PostScript (trademark of U.S. Adobe Systems) of typical PDL which

U.S. Adobe Systems specifies. Plurality can be chosen and stored out of such a general-purpose image. And the data file by format of the application software assignment which drew up this electronic filing document is stored in the document data division 53 as a document record, and it is *****.

[0042] Drawing 10 is a flow chart which shows the flow of assignment page image extract processing. In assignment page image extract processing, an access demand page is distinguished from the extension extracted from extension extract section 22b (step S71). For example, an access demand distinguishes an access demand page from the 3rd page from A. "mp?p3", then its extension "?p3." Next, the electronic-filing-document file for access "A. mp" is opened (step S72), and the index information on the profile section of the electronic-filing-document file is read (step S73). Page 3 record in the page section of an electronic-filing-document file is read based on this index information (step S74), and image data PD for access is read (step S75).

[0043] Drawing 11 is a flow chart which shows the flow of assignment format image data extraction processing. In assignment format image data extraction processing, an access demand page is first distinguished from the extension extracted from extension extract section 22b (step S81). For example, an access demand distinguishes an access demand page from A. "mp/p3?wmf", then its extension as the 3rd page and an assignment format are "wmf(s)." Next, the electronic-filing-document file for access "A. mp" is opened (step S82), and the index information on the profile section of the electronic-filing-document file is read (step S83). Page 3 record is read from the page section of an electronic-filing-document file based on this index information (step S84). It is distinguished whether the image data of an assignment format is stored here (step S85). If the image data of an assignment format is stored, image data PD of an assignment format will be read (step S86). If the image data of an assignment format is not stored, image data PD of high quality is read from the image data PD group stored in the page 3 record (step S87). And read quality image data PD is changed into image data PD of an assignment format (step S88).

[0044] Thus, image data PD of the specified format can be transmitted by specifying the class of image data PD as an access demand to the same page image. Therefore, since it can send in the graphics format which can perform reception and a display as image data PD with the browser which has generally spread, a large user can peruse a document. Moreover, since the class of data to exchange can be chosen, the standard image which can be treated by the client, the image of high voltage shrinking percentage, a high quality image, etc. Usually, the amount of data peruses by few monochrome binary compression images, and require a color picture if needed, or For example, a network near in the network having become empty sake, When allowances are in the amount of data transfer, the image of quality serious consideration is required and the transfer approach according to conditions can be chosen -- it is crowded or the conditions that it is far and a baud transmission rate is bad require the image of amount-of-data relief serious consideration.

[0045] Drawing 12 is a flow chart which shows the flow of viewing-area assignment processing, display scale-factor assignment processing, and data file acquisition processing. In viewing-area assignment processing, display scale-factor assignment processing, and data file acquisition processing, distinction of an access demand page and the content of a processing demand is performed from the extension extracted from extension extract section 22b (step S91). Next, the electronic-filing-document file for access is opened (step S92), and the index information on the profile section of the electronic-filing-document file is read (step S93). Page 3 record of the page section of an electronic-filing-document file is read based on this index information (step S74). Here, it moves to the processing according to image data processing demand.

[0046] At step S91, supposing viewing-area assignment processing was distinguished as a content of a processing demand, the image data for access will be read (step S95), and the image of the field specified from the image data for access will be created (step S96). Thus, an image data with still more sufficient transmission efficiency is exchangeable by defining the content of processing which specified the viewing area of image data PD needed for an access demand as "http://www.fx.co.jp/A.mp? (20 30) - (150x400)." This is advantageous especially when reducing the amount of data transmitted. Moreover, also when dividing into subregion when perusing the manuscript of a big paper size, and transmitting,

the amount of data and the reduction effectiveness of the transfer time are high.

[0047] At step S91, supposing display scale-factor assignment processing was distinguished as a content of a processing demand, the image data of high resolution will be read (step S97), and the image of the resolution specified from the image data of the read high resolution will be created (step S98). Thus, a still more detailed image data is exchangeable by defining the content which specified the display scale factor of image data PD needed for an access demand. As an access demand, it is

"http://www.fx.co.jp/A.mp?75dpi", for example.

"http://www.fx.co.jp/A.mp?100dpi"

Or "http://www.fx.co.jp/A.mp?100%"

"http://www.fx.co.jp/A.mp?200%"

It can define by the format containing the said expanding-and-contracting multiplier. If the resolution of the image which a minute document can also peruse a detail now and will be transmitted if this raises the resolution of the image transmitted is lowered, it can look down also at a document with a big printing plate at a high speed, and document access according to the object can be realized.

[0048] Here, since the data file of general application software can be acquired when it is defined as acquiring not only the image for access but the document data itself for "an access demand", if it is distinguished whether there was any acquisition demand of a data file (step S99) and there is an acquisition demand, the document record of document data division will be read (step S100). When this thinks that it wants for the word processor data for edit to come to hand from the perused image, the word processor data can be acquired by publishing a data acquisition demand by the continuous actuation.

[0049] Moreover, accessible conditions can be registered into the profile section 51 of an electronic filing document, and the judgment of response propriety is possible for every address with an access demand, and demand classification. The system of a configuration so that this may permit access only to a client with the specific address can be built. The system configuration which can control the content of service of the document information that similarly it is as enabling sending of the data file of the general application software which became the origin of an electronic filing document **** [, and] which can be received by the client unit with the specific address can be built. [enabling only access by the level image of document access] [making printing possible] Otherwise, a controllable system configuration can guess easily the content of the service offered according to the conditions and the user conditions to access of a client.

[0050] Drawing 13 is a flow chart which shows the flow of access privilege judging processing. In access privilege judging processing, an access demand page is first distinguished from the extension extracted from extension extract section 22b (step S111). Next, the electronic-filing-document file for access is opened (step S112), and the access information of the profile section of the electronic-filing-document file is read (step S113). Here, collating of access demand origin is performed (step S114). If collating is O.K., it will distinguish that access is possible (step S115), and if it is not O.K., the response of access refusal will be carried out (step S116).

[0051] Thus, an access control which was referred to as [as opposed to / in enabling sending of the data file of general application software **** / the client on the same network] being as enabling only access by the image at the client which has accessed via WAN **** [and] becomes possible only to a client on the staff by using registration of accessible conditions. [making printing possible]

[0052] Drawing 14 is a flow chart which shows the flow of order page reference information creation processing. In the page [order] reference information creation processing in the reference information generation section 26, an access demand page is first distinguished from the extension extracted from extension extract section 22b (step S121). Next, the electronic-filing-document file for access is opened (step S122), the page number attribute of the profile section of the electronic-filing-document file is read, and it investigates whether the record for what page is in the electronic-filing-document file (step S123). Here, the page by which the access demand is carried out distinguishes whether it is a head page (step S124). If it is a head page, since there will be no page before it, a current page and the next page of a current page are determined as the page number of the support which should be embedded as reference

information (step S125). That is, supposing an access demand page is n , it will be referred to as page $=n+1$ before page $=n$ and the back. If it is pages other than a head, the page by which the access demand is carried out will distinguish whether it is the last page (step S126). If it is the last page, since there will be no page after this, it is referred to as page $=n-1$ and back page $=n$ a front (step S127), and if it is a middle page, it will be referred to as page $=n+1$ page $=n-1$ and the back a front (step S128).

[0053] Then, in the response format composition section 27, processing which processes the data format for a response is performed. This processing creates the general-purpose exchange format which can interpret a client from the reference information to assignment of the image file for access, and an order page.

[0054] For example, in the document processing section 25, assignment page image extract processing is performed to an access demand "A. mp?p3+JPG." The image data of the page image of the JPEG (Joint Photographic Experts Group) format "A. MP-p3.JPG" is created. On the other hand, in the reference information generation section 26, a before page ($n=2$) and an after page ($n=4$) are determined, and it is inputted into the response format composition section 27, respectively. In the response format composition section 27, the following predetermined general-purpose exchange formats are generated based on the inputted information, for example.

[0055] Drawing 15 is drawing showing the example of generation of the data format for a response. The data format for a response of a graphic display is the example described by the syntax of HTML of WWW, and is generated by the text file. According to this text file, it is shown that the character string surrounded by a tag `<TITLE>` and `</TITLE>` is displayed on the title column of the access window in the display 14 of a client 10. The part surrounded by the tag `<BODY>` and `</BODY>` is description of the text, and first displaying the page image by which processing generation was carried out to the access demand, i.e., the image of a JPEG format of an assignment text file "A. MP" of the 3rd page, is shown. The following two lines are the part where reference information was embedded, and it is `<A. HREF="reference place">` Graphic-character train It is described by in the form of ``. When upper description is performed with document access equipment, reference of the content of reference "a reference place" is performed by directing the displayed "graphic-character train." Therefore, in a client side, when the character string a "before page" is displayed and the character string is directed with an input device 13, the access demand which specified a text file "A. MP" and the page number (the 2nd page) is published. Moreover, when the character string "degree page" is displayed and the character string is directed with an input device 13, the access demand which specified a text file "A. MP" and the page number (the 4th page) will be published.

[0056] Although it is the access demand of the method which extended the location notation part of reference information and the example was indicated so far, it is realizable with the method of another arbitration which tells others from a client to a file server. For example, although there is a device which is called the `<FORM>` tag for telling a user's input to a file server from a client in the case of HTML of WWW, there is also a method using this device.

[0057] Moreover, the access demand enumerated until now can also be constructed, combined and specified. For example, assignment and viewing-area assignment / display scale-factor assignment of the class of page assignment and image data is compounded, and if it combines like

"http://www.fx.co.jp/A.mp?p3+wmf+(20 30)-(150x400)+150dpi" and specifies, the result of having compounded each processing can be perused. Thereby, the subregion transfer at the time of gathering a scale factor, the resolution assignment according to format, etc. can control transmission efficiency and display quality more finely.

[0058] Furthermore, the class of image data PD returned from a file server is restricted, or fixed constraint can be added to the processing assignment received according to an access privilege. For example, although a certain specific user is answered at the Request to Send of the original data file (for example, the word processor data itself) of general application software When making it only the image information for a display not answer to other users or allowing reuse of a character code Only transmission of the raster image instead of a code receives the display image of a vector system or to forbid usually [delivery and] Various applications according to intentions by the side of a document

provider, such as restricting a printing demand, when it refuses and a printing tariff is paid, making it answer a printing demand, or restricting it, when only a cover can usually be perused and a tariff is paid, and enabling whole sentence access of it, although a display demand is answered, are. If document information to transmit is made to adjustable by this, only the information suitable for an intention of an implementer can be offered. Moreover, if a consent judging is developed, it can also be made a system with accounting structure like a catalog order system.

[0059]

[Effect of the Invention] As explained above, in this invention, the document which consists of two or more pages created with general application software In case it stores in document are recording equipment, at least one image data aggregate stores by the electronic filing document currently held per page. In case document access equipment publishes an access demand, in order to combine not only electronic-filing-document file designation but page assignment and to publish it, reference information was embedded beforehand at the format of the document for access sent from document are recording equipment. Thereby, image data can be sent and received per page and the response time to page display demand actuation can be shortened. Moreover, since the document drawn up with general application software can be perused as a general-purpose image data, compared with the access equipment corresponding to various document formats, as for the access equipment treating general-purpose image information, the treatment of various documents becomes possible with many commercial access equipments. And without adding correction to the access device (= WWW browser) which has already circulated in the commercial scene in any way, the configuration of the document access equipment by the side of a user can make a document are recording equipment side only able to respond, and can realize this document access system. Furthermore, since the image data for an access display is created temporarily [whenever there is an access demand by having had the document processing means], it is not necessary to save image data dynamically generable to a demand beforehand, and it can gather are recording effectiveness to document are recording equipment.

[Translation done.]